

Previous Price Modeling Research

Many price models for grains have employed the stocks-to-use ratio to represent market conditions in explaining price movements. The stocks-to-use ratio is defined as stocks of the commodity at the end of a particular time period divided by use of the commodity during that time period. As such, market conditions of supply and demand are summarized in this measure. One objective of the analysis presented here is to see how well this simple composite measure captures the effects of market factors in the determination of corn and wheat prices.

Van Meir (1983) and Baker and Menzie (1988) analyzed the relationship between stocks-to-use ratios and corn prices in annual frameworks. Westcott, Hull, and Green (1984, 1985) used such an approach in quarterly models for wheat and corn prices. Numerous other unpublished annual pricing models for corn and wheat using stocks-to-use ratios have been used by USDA in

its forecasts. In each model, the stocks-to-use variable is negatively related to prices and provides a downward sloping, nonlinear curve of prices plotted against ending stocks-to-use ratios.

To represent the effects of governmental price support programs on prices, many grain price models have been estimated with the dependent variable of price minus loan rate. The Baker and Menzie annual corn price model and part of the Van Meir analysis of corn prices and stocks used this approach, as did most of the unpublished USDA models. The U.S. price support program affected corn and wheat prices, particularly in the late 1970's through the mid-1980's when high loan rates along with limited accessibility of FOR and government-owned stocks combined to influence market prices. However, changes in the price support program since 1986 have reduced the interference of that program with price determination.